assuming the ordinary value of the surface tension to hold for drops of that size.

Quite recently Mr. Wilson, who holds the position of "Clerk-Maxwell student" at the University, Cambridge, England, has added another interesting chapter to our knowledge of this subject.

It will be remembered that in 1868 Tyndall observed that a dense cloud was formed when a powerful beam of light, either electric or solar, penetrated a tube full of dustless, pure vapor. The cloudy condensation thus formed was demonstrably due to the action of the radiation at the blue end of the spectrum and even of the rays beyond that. When freshly formed the cloud was of a brilliant blue, which, however, became white as the particles increased in size. (See Tyndall, Contributions to Molecular Physics, London, 1872.) It is difficult to believe that Tyndall's beam of light carried molecules into the tube, where they acted as dust nuclei to condense the moisture. But now Mr. Wilson has discovered a similar effect when the Röntgen rays are allowed to enter the tube. His account of these newest experiments is published in the Proceedings of the Royal Society of London for March, 1896, Vol. XLI, page 338, from which we make the following extract. Similar experiments had been contemplated in connection with the studies prosecuted at the Weather Bureau at Washington, but, in the absence of the necessary apparatus, their execution has been delayed.

In a paper on The Formation of Cloud in the Absence of Dust, read before the Cambridge Philosophical Society, May 13, 1895, I showed that cloudy condensation takes place in the absence of dust when saturated air suffers sudden expansion exceeding a certain critical amount.

I find that air exposed to the action of Röntgen's rays requires to be expanded just as much as ordinary air in order that condensation may take place, but these rays have the effect of greatly increasing the number of drops formed when the expansion is beyond that necessary to produce condensation.

Under ordinary conditions, when the expansion exceeds the critical value, a shower of fine rain falls, and this settles within a very few seconds. If, however, the same expansion be made while the air is exposed to the action of the rays, or immediately after, the drops are sufficiently numerous to form a fog, which persists for some minutes.

In order that direct electrical action might be excluded, experiments were made with the vessel containing the air, wrapped in tinfoil, connected to earth. This was exposed to the rays; the air was then expanded, the current switched off from the induction coil, and, finally, the tinfoil removed to examine the cloud formed.

As before, a persistent fog was produced with an expansion which, without the rays, would only have formed a comparatively small number of drops.

It seems legitimate to conclude that when the Röntgen rays pass through moist air they produce a supply of nuclei of the same kind as those which are always present in small numbers, or, at any rate, of exactly equal efficiency in promoting condensation.

THE TORNADO OF MAY 25, 1896, IN COOK COUNTY, ILL.

The Editor regrets that an excellent report by Henry J. Cox, Forecast Official, and Charles E. Linney, Observer, Weather Bureau (dated Chicago, August 7, 1896), on the tornado that passed over the northern edge of Chicago on May 25 was received too late for publication in the current REVIEW. In fact, the numerous illustrations make the report too voluminous for the REVIEW and more appropriate for a special publication. According to the authors:

The general atmospheric disturbance, which was attended by tornadoes in northeast Iowa and extreme northern Illinois on the night of the 24–25th of May, 1896, did not appear very threatening on the morning of the 24th. Its center at the 8 a. m. (seventy-fifth meridian time) observation was in Alberta, with a trough of low pressure extending southward to Texas. At the p. m. observation the center had moved slightly eastward, the trough still extending far to the south, with a tendency to form a secondary over western Kansas and another over western South Dakota.

During the daytime of the 24th the barometer fell with moderate rapidity east of the trough, while a high area seemed to be moving into western Montana from the north Pacific Coast. Local conditions, as regards temperature, pressure, and moisture, seemed favorable for the formation of thunderstorms in the southeast quadrant of the low, although there was no apparent indication of unusually severe local storms. Our most severe local storms have frequently occurred when the weather map of a few hours previous showed but ordinary barometric gradient; under such circumstances the local conditions are likely to be sluggish as the storm center begins to move eastward.

This storm developed considerably in intensity during the night of the 24th, the center at the morning observation of the 25th being near Winnipeg, Manitoba. The chart of barometer change of the morning of the 25th shows rapidly falling barometer in front of the trough. This is the usual characteristic of such storms, the central depression increasing decidedly before the upper Lake Region is reached.

During the night of the 24–25th tornadoes occurred in northeastern Iowa and extreme northern Illinois, to be followed during the afternoon of the 25th by a tornado in the southeastern part of Lower Michigan. The main storm continued to increase rapidly during the 25th, its center being at White River, at 7 p. m., where the barometer had decreased to 29.14 inches.

Until the evening observation of the 24th but little rain had fallen in connection with this storm, the precipitation being in the shape of light showers throughout the Northwestern States, except a moderately heavy thunderstorm at Williston, N. Dak. Thunderstorms were general during the night of the 24th in the eastern Dakotas, Minnesota, Wisconsin, northeastern Iowa, northern Illinois, Indiana, and Lower Michigan, the local storms assuming tornadic proportions in the parts of Iowa and Illinois previously referred to. The path of greatest destruction of these severe local storms is shown in Chart G (not printed), but it is not assumed that this path was followed by any single tornado, nor that destructive storms occurred throughout the entire area indicated. There were probably three distinct tornadoes in Illinois in addition to those which occurred in Iowa between 10 and 11 p. m. of the 24th. The tornadoes in Illinois occurred at Egan City and Sugar River, at Elgin, and in Cook County, at about 1 a. m., 1.15 a. m., and 2 a. m., respectively, on the 25th.

The special tornado of Cook County moved at first easterly for about 1½ miles, then southeast for three-quarters of a mile, then north of east and east for over 3 miles, when the path of destruction disappears. "A clear-cut path about one-quarter of a mile wide was visible for about 4½ miles from the Des Plaines River to the north branch of the Chicago River." The tornado occurred about 2 a. m., with heavy lightning and thunder and rain. Most of the trees and debris fell toward the east or northeast. The twisting of houses and tree tops may, as it seems to the Editor, have sometimes been the result of a simple straight-line wind pushing obstacles forward in the direction of least resistance, rather than the result of a whirling wind. In other cases the locations of the debris indicate opposing northerly and southerly winds, and in these regions, therefore, a twisting tornado may be reasonably inferred.

The report is very full of the minor details of destruction, and the meteorological maps, charts, and diagrams are very satisfactory. In general, and in view of the great number of storms that invite investigation, one is forced to consider what items are worthy of observation and description in order to advance our knowledge of the origin of such storms, the laws that control them, and the method of avoiding them.